

REMARKS

Prior to entry of this amendment, claims 1-20 are pending in the subject application. By this amendment, claims 1 and 15 are amended, and claims 1-20 are presented to the Examiner for further consideration on the merits.

A. Introduction

In the outstanding Office Action Made Final, the Examiner rejected claims 1, 6-10, and 13-19 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,474,783 to Pilosof et al. (hereinafter referred to as "the Pilosof et al. reference"); rejected claims 2-5 under 35 U.S.C. § 103(a) as being unpatentable over the Pilosof et al. reference in view of U.S. Patent No. 5,713,673 to Nemoto et al. (hereinafter referred to as "the Nemoto et al. reference"); rejected claims 11 and 12 under 35 U.S.C. § 103(a) as being unpatentable over the Pilosof et al. reference in view of U.S. Patent No. 6,582,058 to Yi et al. (hereinafter referred to as "the Yi et al. reference"); and indicated that claim 20 was allowable.

Applicants respectfully traverse these rejections for at least the reasons set forth below.

B. Asserted Anticipation Rejection of Claims 1, 6-10, and 13-19

In the outstanding Office Action Made Final, the Examiner rejected claims 1, 6-10, and 13-19 under 35 U.S.C. § 102(b) as being anticipated by the Pilosof et al. reference.

As amended, claim 1 now recites, in part:

-- laser beam irradiating means for irradiating a laser beam through the condenser lens and passageway plate into the ink chamber, directly heating the ink contained in the ink chamber . . . --.

This amendment finds support in the specification on pages 7-8 in paragraph [0034]:

The passageway plate 110 surrounding the ink chamber 114 and the ink channel 112 may be formed of a transparent material through which a laser beam 142 is transmitted

As amended, claim 15 now recites, in part:

-- increasing amplitude of the pressurized wave in the ink to expel an ink droplet from the surface of the ink by the vibration of the surface of the ink.--.

This amendment finds support in the specification on pages 9 in paragraph [0039]:

As the energy supplied from the laser beam 142 increases, the amplitude of the free surface of the ink 150 increases. If the amplitude is greater than or equal to a predetermined level, the ink droplet 152 exceeds the surface tension and atmospheric pressure and is expelled from the free surface of the ink 150. The separated ink droplet 152 is expelled

On page 7 of the Office action, the Examiner asserted that the laser source 10 described in the Pilosof et al. reference passes through a condenser lens 14 directly onto ink contained in ink chamber 30. As described on lines 48-50 of column 5, however, the laser light pulse passes through the window 24 and is absorbed by the buffer liquid 34. As further described on lines 36-38 of column 5, the buffer liquid 34 is preferably characterized by very high absorption for laser light. Because the buffer liquid is opaque, the Pilosof et al. reference does not directly apply a laser to an ink chamber. Thus, applicants respectfully submit that the Pilosof et al. reference fails to disclose or even suggest all of the elements of claim 1, as amended. Accordingly, applicants respectfully request favorable reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. § 102(b) based on the Pilosof et al. reference.

On page 5 of the Office action, the Examiner asserted that the Pilosof et al. reference described a method of expelling ink comprising the step of irradiating 10 a laser beam 36 onto the ink 17 contained in the ink chamber 30 to generate a pressurized wave. As described above, the Pilosof et al. reference actually applies a laser beam to a buffer liquid 34, not to the ink. In addition, as described in lines 52-54 of column 5, an acoustic wave propagates in the buffer liquid, crosses the intermediate body 28, and enters the ink chamber 30. This wave is not amplified by irradiating a laser beam directly onto the surface of the ink. Thus,

applicants respectfully submit that the Pilosof et al. reference fails to disclose or even suggest all of the elements of claim 15, as amended. Accordingly, applicants respectfully request favorable reconsideration and withdrawal of the rejection of claim 15 under 35 U.S.C. § 102(b) based on the Pilosof et al. reference.

Claims 6-10, 13, 14, and 19 ultimately depend from independent claim 1. Hence, claims 6-10, 13, 14, and 19 are at least allowable as depending from an allowable base claim, namely independent claim 1, which includes allowable subject matter that is neither taught nor suggested in the references of record. Accordingly, applicants respectfully request favorable reconsideration and withdrawal of the rejection of claims 6-10, 13, 14, and 19 under 35 U.S.C. § 102(b) based on the Pilosof et al. reference.

Claims 16-18 ultimately depend from independent claim 15. Hence, claims 16-18 are at least allowable as depending from an allowable base claim, namely independent claim 15, which includes allowable subject matter that is neither taught nor suggested in the references of record. Accordingly, applicants respectfully request favorable reconsideration and withdrawal of the rejection of claims 16-18 under 35 U.S.C. § 102(b) based on the Pilosof et al. reference.

C. Asserted Obviousness Rejection of Claims 2-5

In the outstanding Office Action Made Final, the Examiner rejected claims 2-5 under 35 U.S.C. § 103(a) as being unpatentable over the Pilosof et al. reference in view of the Nemoto et al. reference.

The Nemoto et al. reference fails to remedy the deficiencies of the Pilosof et al. reference. Claims 2-5 ultimately depend from independent claim 1. Hence, claims 2-5 are at least allowable as depending from an allowable base claim, namely independent claim 1, which includes allowable subject matter that is neither taught nor suggested in the references of record. Accordingly, applicants respectfully request favorable reconsideration and

withdrawal of the rejection of claims 2-5 under 35 U.S.C. § 103(a) based on the Pilosof et al. and Nemoto et al. references.

D. Asserted Obviousness Rejection of Claims 11 and 12

In the outstanding Office Action Made Final, the Examiner rejected claims 11 and 12 under 35 U.S.C. § 103(a) as being unpatentable over the Pilosof et al. reference in view of the Yi et al. reference.

Claims 11 and 12 depend from independent claim 1. Hence, claims 11 and 12 are at least allowable as depending from an allowable base claim, namely independent claim 1, which includes allowable subject matter that is neither taught nor suggested in the references of record. Accordingly, applicants respectfully request favorable reconsideration and withdrawal of the rejection of claims 11 and 12 under 35 U.S.C. § 103(a) based on the Pilosof et al. and Yi et al. references.

E. Allowable Subject Matter

Applicants note with appreciation the Examiner's indication of allowable subject matter in claim 20. Moreover, in view of the above amendment and remarks, applicants respectfully submit that all of the pending claims are allowable.

F. Request for Entry of This Amendment

Applicants respectfully request that this amendment be entered at least because the amendment: (1) does not remove limitations relied upon by the applicants or by the Examiner as defining the present invention over the applied art; (2) does not add any new claims; and (3) places the claims in condition for allowance and/or in better form for appeal.

G. Conclusion

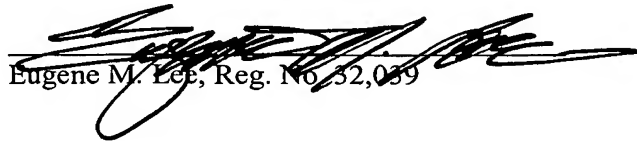
In view of the foregoing amendments and remarks, reconsideration of this application is earnestly solicited, and an early and favorable further action upon all the claims is hereby requested.

If the Examiner believes that additional discussions or information might advance the prosecution of the instant application, the Examiner is invited to contact the undersigned at the telephone number listed below to expedite resolution of any outstanding issues.

Respectfully submitted,

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DEPOSIT ACCOUNT CHARGE AUTHORIZATION

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If fee payment is enclosed, this amount is believed to be correct. However, the Director is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 50-1645.

Any additional fee(s) necessary to effect the proper and timely filing of the accompanying-papers may also be charged to Deposit Account No. 50-1645.